

ULTRA™ K-25™ ESFR

Low Pressure Early Suppression Fast Response

Manufactured by: Central Sprinkler Company
451 North Cannon Avenue, Lansdale, Pennsylvania 19446



Product Description

The Central ULTRA™ K-25™ Early Suppression Fast Response (ESFR) Automatic Sprinkler has been designed to meet high challenge fire hazards while eliminating the high pressure requirements of K-14 ESFR's and the need for in-rack sprinklers.

The Model ULTRA™ K-25™ uses a larger orifice than other ESFR sprinklers which allows the reduction of the required pressure. The pressure required varies by building and storage height. Refer to the required pressure chart for specific requirements.

The ULTRA™ K-25™ has several advantages over 14 K-Factor ESFR's. The main advantage is in the lower required pressure. This reduction, up to 60% in some cases, can have a dramatic effect on the sprinkler system. It can eliminate the need for a pump and all of the associated pump expense, such as additional electrical service to the building. The maximum deflector distance is 18" (457.2 mm) compared to 14" (355.6 mm) as is the case for 14 K-factor ESFR's, and the reduction in pressure can make installation more cost effective with smaller easier to install pipe. Another main advantage is that the ULTRA™ K-25™ is for buildings up to 45'-0" (13.7 m) high with 40'-0" (12.2 m) of storage without the need for in-rack sprinklers. 14 K-Factor ESFR's require in-rack sprinklers discharging at 50 psi in this situation. Eliminating in-rack sprinklers in situations where 14 K-Factor ESFR's

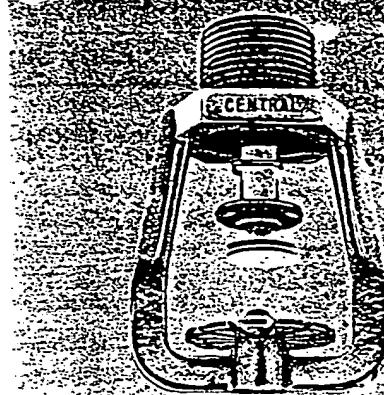
can not, shows the outstanding performance of the ULTRA™ K-25™.

The Model ULTRA™ K-25™ utilizes a 160°F/ 71°C or a 200°F/ 93°C Fast Response element, giving the sprinkler the required fast response characteristics. The fast response, combined with water droplet size and velocity provide early suppression to high challenge fires.

Operation: The ULTRA™ K-25™ utilizes a heat sensitive three fin operating element. It does not use an o-ring in any part of the design. The element operates when heat is absorbed by the heat fins and conducted to the alloy pellet. At the rated temperature the alloy pellet melts, causing the ball plunger to drop, freeing balls from the retaining groove. This releases the heat fin/ washer assembly and allows the arms to eject and the water to flow from the open orifice.

— ATTENTION —

ULTRA™ K-25™ ESFR'S have a 1" (25 mm) thread. Be sure to list/ order the correct outlet on the branchline.



Early Suppression Fast Response Automatic Sprinkler



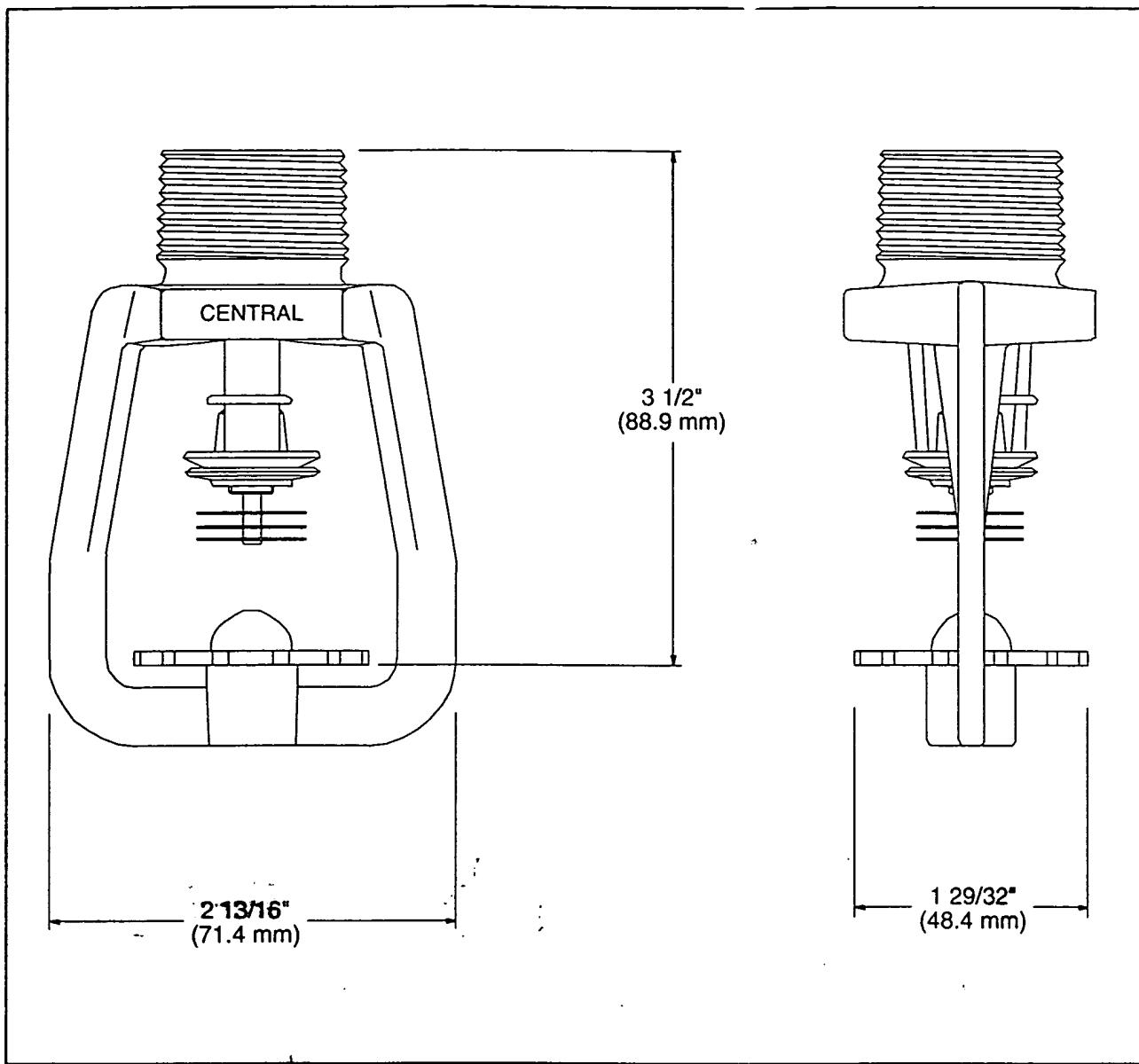
Technical Data

Model: ULTRA™ K-25™
Style: Pendent
Orifice Size: .930 (23.6 mm)
K-Factor: 25.0 (360.5 metric)
Thread Size: 1" N.P.T. (25 mm)
Temperature Rating: 160°F/ 71°C
200°F/ 93°C

Sensitivity: Quick Response
Approvals: FM
Maximum Working Pressure:
175 psi (12.1 bar)
Factory Hydro Test: 100% at
500 psi (34.5 bar)
Standard Finish: Brass
Length: 4 3/32" (104 mm)
Width: 2 13/16" (71.4 mm)
Weight: 0.69 lbs. (313 g)
Patents: Patents are pending.

BEST AVAILABLE COPY

ULTRA™ K-25™
Early Suppression Fast Response Pendent Sprinkler



Note: For projects requiring Factory Mutual Guidelines, consult the Factory Mutual Loss Prevention Data Sheets. Some of their requirements are different.

Required Pressure

Max. Bldg. Height	Max. Storage Height	ULTRA™ K-25™ ESFR PSI Required
30' (9.1m)	25' (7.6m)	20* (1.4 bar)
35' (10.7m)	30' (9.1m)	30* (2.1 bar)
40' (12.2m)	35' (10.7m)	40* (2.8 bar)
45' (13.7m)	40' (12.2m)	50* (3.4 bar)

* No in-racks required for any K-25™ application.

Comparison

K-14 ESFR PSI Required
50 (3.4 bar)
75 (5.2 bar)
75 (5.2 bar)
90**+(6.2 bar)

** K-14 require 1 level of in-rack sprinklers discharging at 50 psi.

BEST AVAILABLE COPY



Design Data

Design Requirements — Applications

The design and installation of ULTRA™ K-25™ ESFR sprinkler systems must comply with the applicable standards of NFPA, the Authority Having Jurisdiction, Factory Mutual's Loss Prevention Data Sheets, and the information provided in this data sheet.

Commodity: Cartoned unexpanded plastic: and class I,II,III,or IV commodities, encapsulated or unencapsulated

Minimum Pressure: Follow the chart on page 2.

Minimum Flow: Use 25 as the K-Factor and the pressure according to the chart on page 2 with standard hydraulic calculation procedures.

Maximum deflector distance: 18" (457.2 mm).

In-rack sprinklers: Not required for any building height or storage height.

All other design guidelines are the same for all ESFR sprinklers and can be found in the NFPA Standards and FM Loss Prevention Data Sheets.



Installation

All Central Model ULTRA™ K-25™ Automatic Sprinklers must be installed according to current NFPA Standards and these installation instructions. Deviations from these requirements and standards or any alteration to the sprinkler itself will void any warranty made by Central Sprinkler Company. In addition, installation must also meet local government provisions, codes, and standards as applicable.

The system piping must be properly sized by hydraulic calculation to ensure the minimum required pressure at the sprinkler. Install sprinklers after the piping is in place to avoid mechanical damage; replace any damaged units.

Upon completion of the installation, the system must be tested per recognized standards.

In the event of a thread leak, remove the unit, apply new pipe joint compound or tape, and reinstall.

*Teflon is a trademark of the DuPont Corp.

Installation Sequence

Step 1. Use only a non-hardening pipe joint compound or Teflon* tape. Apply only to the male threads.

Step 2. Hand tighten the sprinkler into the fitting. Use wrench to tighten the unit into the fitting. A leak-tight joint requires only 7 to 14 ft.-lbs. (9.5 to 19.0 Nm) of torque; a tangential force of 14 to 28 lbs. (62.3 to 124.6 N) delivered through a 6" (150 mm) handle will deliver adequate torque.



Care & Maintenance

Sprinklers must be handled carefully. They must not be transported or stored where ambient temperature may exceed 100°F/38°C. For best results, store them in a dry, cool location in the original shipping package.

Do not install sprinklers that have been dropped or visibly damaged. Sprinklers should never be painted, coated, plated, or altered in any other way from manufactured condition or

they may not function properly. Any sprinklers altered in such manner must be replaced.

The owner is responsible for the proper operating condition of all fire protection devices and accessories. The NFPA Standard 25 entitled, "Inspection, Testing and Maintenance of Water-Based Fire Protection System", contains guidelines and minimum maintenance requirements. Furthermore, the local Authority Having Jurisdiction may have additional regulations and requirements for maintenance, testing, and inspection that must be obeyed.

It is advisable to have sprinkler systems inspected regularly by a qualified inspection service. Length of time between such inspections can vary due to accessibility, ambient atmosphere, water supply, and site activity.

Do not attempt to re-assemble or otherwise reuse a sprinkler that has operated. Replace any sprinkler exhibiting corrosion or damage; always use new sprinklers of the same type and temperature rating as replacements.

Because the discharge pattern is critical to protection of life and property, nothing should be hung or attached to the sprinkler unit that would disrupt the pattern. Such obstructions must be removed. In the event that construction has altered the original configuration, additional sprinklers should be installed to maintain the protection level.

Do not attempt to replace sprinklers without first removing the fire protection system from service. Be certain to secure permission from all Authorities Having Jurisdiction, and notify all personnel who may be affected during system shutdown. A fire watch during maintenance periods is a wise precaution.

To remove the system from service mode, first refer to the system operating guide and valve instruction. Drain the water and relieve pressure in the pipes. Remove the existing unit and install the replacement, using only the special sprinkler wrench. Be certain to match the model, style, orifice, and temperature rating.

A fire protection system that has been shut off after an activation should be returned to service immediately.

BEST AVAILABLE COPY

Inspect the entire system for damage and replace or repair as necessary. Sprinklers that did not operate but were subjected to corrosive elements of combustion or excessive temperatures should be inspected, and replaced if need be.

Guarantee: Central Sprinkler Company will repair and/or replace any products found to be defective in material or workmanship within a period of one year from the date of shipment. Please refer to the current Price List for further details of the warranty.



Ordering Information

Ordering Information: When placing an order, indicate the full product name and correct spare sprinkler cabinet with spare sprinklers. Also, be sure that outlets on branch line piping are 1" so that they can accept the 1" thread of the ULTRA™ K-25™.

Availability and Service: Central sprinklers, valves, accessories, and other products are available throughout the U.S. and Canada, and internationally, through a network of Central Sprinkler distribution centers. You may write directly to Central Sprinkler Company, or call (215) 362-0700 for the distributor nearest you.

Patents: Patents are pending.

Conversion Table:

1 inch	= 25.400 mm
1 foot	= 0.3048 m
1 pound	= 0.4536 kg
1 foot pound	= 1.36 Nm
1 psi	= 6.895 kpa = 0.0689 bar = 0.0703 kg/cm ²
1 U.S. gallon	= 3.785 dm ³ = 3.785 liters

Conversions are approximate.



BEST AVAILABLE COPY

Central Sprinkler Company

451 North Cannon Avenue, Lansdale, PA 19446
PHONE (215) 362-0700
FAX (215) 362-5385